REMARKS

Claims 1-23 are currently pending in this application. Reconsideration of all outstanding rejections is respectfully requested in view of the following remarks.

Applicant thanks the Examiner for fully considering the Appeal Brief filed September 18, 2009, and subsequently withdrawing the rejections set forth in the Office Action dated February 18, 2009. However, Applicant notes that the current rejections suffer from the same deficiencies found in the rejections of the previously appealed Office Action. For example, the substitution of U.S. Patent No. 6,797,974 to Philipp et al. ("Philipp"), in the current Office Action, for U.S. Patent No. 4,352,988 to Ishida et al., as found in the previous Office Action, does nothing to remedy the fact that the primary reference U.S. Patent No. 6,101,266 to Lasksowski et al. ("Laskowski"), used in both the previous and current Office Actions, teaches away from the present invention. As stated in the previously filed Appeal Brief, it is improper to combine references where the references teach away from their combination. See In re Grasselli, 713 F.2d 731, 743 (Fed. Cir. 1983) (emphasis added). For at least this reason, the present Office Action contains rejections that suffer from the same defects that were previously appealed, briefed, and found persuasive.

Claim Rejections – 35 U.S.C. § 103

Claims 1-23 have been rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Laskowski, in view of Philipp. Applicant respectfully disagrees with the Office Action's assertion, and traverses the rejection in full.

Claim 1 is directed to a method for checking a document of value for soiling and spots. The method includes a step of illuminating, with an illumination system, the document of value

with an intensity (I_B) in at least a partial area. The method further includes a step of capturing, with a detector system, at one or more measuring places, the intensity (I_T) of the light transmitted through the partial area of the document of value and the intensity (I_R) of the light reflected, or remitted, by the partial area of the document of value. The intensities of the transmitted and the reflected light are summed for each measuring place in order to obtain a sum intensity value. The method further includes a step of comparing the sum intensity value for each measuring place to a predetermined standard value.

Claim 13 is directed to a checking device for checking documents of value for soiling and spots. The checking device includes an illumination system. The illumination system is configured to illuminate a document of value at least in a partial area with an intensity (IB). The checking device further includes a detector system. The detector system is configured to capture from one or more measuring places the light transmitted through the document of value and the light reflected, or remitted, by the document of value. The illumination and detector systems are designed to separately capture the intensity (I_T, I_R) of the transmitted light and of the reflected light. The checking device further includes an evaluation unit, in which the intensities of the transmitted and reflected light are summed up for each measuring place, so that for each measuring place precisely one sum intensity value is obtained. Each obtained sum intensity value is compared to a predetermined standard value.

Laskowski is generally directed to an apparatus and method of determining the conditions and/or values of bank notes. See Laskowski Abstract. More specifically, Laskowski discloses determining the condition and/or value of a bank note based on measurements of intensities of light that are either reflected off of or transmitted through a bank note. See Laskowski col. 3, ln. 66 - col. 4, ln. 9. The measurement of light reflected off of a bank note is referred to as a

reflectance value. Id. The measurement of light transmitted through a bank note is referred to as a transmission value. Id. These measurements are used to create a correlation between the sensed value set and a stored value set. See Laskowski col. 4, lns. 18-39. Based on the level of correlation, the denomination and orientation of the observed bank note can be identified. See Laskowski col. 4, lns. 29-39.

Philipp is generally directed to an apparatus and method for determining bank note fitness. See Philipp Abstract. More specifically, Philipp discloses determining the condition of a bank note based on measurements of intensities of light that are reflected off of, not transmitted through, a bank note. See Philipp col. 2, lns. 28-30. Philipp notes that "[t]he invention starts out from the consideration that two identical illumination and sensor units are disposed on both sides of a transport path for bank notes to be checked." See Philipp col. 1, lns. 32-34, Figure 1. Additionally, Philipp notes that "[i]llumination at the same time and of the same kind from both sides with the same brightness (intensity) avoids misjudgments in areas, e.g. in the area of the watermark." See Philipp col. 2, lns. 52-54. According to Philipp: "[a] value for soiling can be derived from the brightness of all pixels: $S_i = \frac{3P_i}{P_{i-1} + P_i + P_{i+1}}$ where values P_i correspond to the brightness or intensity of pixel i. Value S_i must be determined for all pixels, a value for soiling then resulting from the standard deviation of all S_i. For reducing the computing effort it is possible to perform a simple evaluation by which one determines only values of consecutive pixels i in the transport directions, i.e. only one-dimensionally: $S_T = \frac{\sum_i |P_i - P_{i+1}|}{\sum_i P_i}$. The mean

value of all tracks in transport direction S_T is then used as the value for soiling." See Philipp col. 3, lns. 10-30.

The Office Action admits that "Laskowski fails to teach the reflected light are [sic] summed up to obtain a sum intensity value and the sum intensity value of each measuring place is each compared to a predetermined value." See Office Action p. 3 (emphasis added). However, this admission misstates the limitations recited in claims 1 and 13. Specifically, claims 1 and 13 require that: "for each measuring place the intensities of the transmitted and the reflected light are summed up to obtain a sum intensity value and the sum intensity value for each measuring place is each compared to a predetermined standard value." (emphasis added). Indeed, as discussed above, Laskowski teaches away from summing the transmitted and the reflected light when determining if a bank note is warn of soiled.

Specifically, Laskowski addresses the detection of soiling and/or spots on a bank note at column 9, lines 49-58. In this section Laskowski states:

> Calculating the transmission and reflectance values separately has the advantage that the individual values can be analyzed individually by the control circuit in accordance with its programming. This may be preferred in some embodiments. For example, high correlation for overall reflectance but not transmission may be indicative of some quality or condition of the note that may warrant taking it out of circulation. This may include for example that the note is worn or soiled, or that it is a double note in which two genuine notes are moving in overlapped relation.

See Laskowski col. 9, lns. 49-58 (emphasis added). That is, Laskowski expressly states that it is advantageous and preferred for the reflectance and transmission values to be analyzed individually and not as a summed value when assessing the level of soiling and spots in a bank note. Laskowski specifically says not to sum transmission values. Thus, Laskowski, in the context of determining soiling and spots in a document of value, clearly teaches away from "for each measuring place the intensities of the transmitted and the reflected light are summed up to

obtain a sum intensity value and the sum intensity value for each measuring place is each compared to a predetermined standard value," as is recited in claims 1 and 13. Thus, even if Philipp did remedy the deficiencies of Laskowski, which it does not, the combination of the art to form a rejection under 35 U.S.C. § 103 would be improper, because it is improper to combine references where the references teach away from their combination. See In re Grasselli, 713 F.2d at 743 (emphasis added).

Moreover, the Office Action's reliance on Philipp to disclose the above recited limitations of claims 1 and 13 is fundamentally flawed. Philipp does not collect data regarding transmitted light, but rather collects data regarding only reflected light. See Philipp col. 2, lns. 28-30, col. 3, lns. 10-30. Philipp does not disclose or suggest that "the intensities of the transmitted and the reflected light are summed up to obtain a sum intensity value," as recited in claims 1 and 13.

Additionally, as shown in the above discussed equations, Philipp teaches that the values which are summed (i.e., $P_{i-1} + P_i + P_{i+1}$) are consecutive (i.e., different) pixels. This in no way teaches summing multiple values for each measuring place, as required by claims 1 and 13.

For at least the above discussed reasons, Applicant asserts that claims 1 and 13 are allowable over the cited prior art. Because claims 1 and 13 are allowable, dependent claims 2-12, 14-22, and 23 are also allowable. Applicant respectfully requests that the current rejections be withdrawn.

Claim 2 is allowable because it depends from claim 1, as discussed above, and for the following additional reasons. Claim 2 recites the limitations of claim 1, as discussed above, and further includes the limitation of "wherein the intensity values (I_T, I_R) captured from the measuring places (2) are corrected before the summation for compensating locally differing

measuring conditions." The Office Action cites to Laskowski col. 17, lns. 17-32 as disclosing the afore recited limitation. However, nowhere in this portion of Laskowski is any form of value correction described.

Further, while Laskowski does disclose that "[i]n the calibration mode the optical sensors and electronic subassembly 120 is operative to adjust the amount of radiation generated by each of emitters to produce a preset output. This ensures that the level of radiation produced by each of the emitters is sufficient to correlate accurately with the stored value sets." See Laskowski col. 23, lns. 60-67. This type of corrective adjustment to the emitters takes place prior to the capture of the intensity values of the present invention, and in no way discloses correcting the values to compensate for locally differing measuring conditions. The corrective measures of the current invention are not tied to the emitters, but rather are conducted after capture of the intensity values by applying a mathematical formula, for example: $I_{RK}(x) = a(x) * (I_R(x) - I_{RD}(x))$. (Appln. p. 8, lns. 1-17).

> Here $I_{RK}(x)$ and $I_{TK}(x)$ are the corrected intensity values. The values a(x) and b(x) are place-dependent correction factors for the reflection or the transmission as to compensating fluctuations in the illumination profile produced by the illumination device 7 as well as for compensating the sensitivities of the individual detector elements at the different places x. The values $I_{RD}(x)$ and $I_{TD}(x)$ are dark current intensities. They are measured intensity portions, which are caused by dark currents of the respective detector elements at the individual places x.

Id. The cited references fail to disclose any sort of mathematical correction to the intensity values, which is based on the location of the performance of the method/system. For this additional reason claim 2 is allowable.

Claim 3 is allowable because it depends from claims 1 and 2, as discussed above, and for the following additional reasons. Claim 3 recites the limitations of claims 1 and 2, as discussed above, and further includes the limitation of "wherein the correction compensates for local

intensity fluctuations in illumination that occur during measuring." The Office Action cited to the identical portion of Laskowski, as was discussed above with regard to claim 2, as disclosing this limitation. Again neither this portion of Laskowski, nor any other portion of the cited art, discloses the corrective nature of the claim limitation. For this additional reason claim 3 is allowable.

Claim 4 is allowable because it depends from claims 1 and 2, as discussed above, and for the following additional reasons. Claim 4 recites the limitations of claims 1 and 2, as discussed above, and further includes the limitation of "wherein the correction compensates for locally differing detector specifications." The Office Action cited to Laskowski Fig. 2 Reference No. 22 as disclosing this limitation. Fig. 2 is an isometric schematic view of three spot sensing assemblies sending test spots on a moving note. See Laskowski col. 5, lns. 5-6. Reference No. 22 is a transmission detector. See Laskowski col. 6, lns. 60-62. The mere existence of a transmission detector in no way discloses the subject matter of the afore recited limitation. For this additional reason claim 4 is allowable.

Claim 5 is allowable because it depends from claims 1, 2, and 4, as discussed above, and for the following additional reasons. Claim 5 recites the limitations of claims 1, 2, and 4, as discussed above, and further includes the limitation of "wherein each captured intensity value (I_T, I_R) is reduced by a dark current measuring value (I_{TD}, I_{RD}) determined for the respective measuring place (2) before the summation." The Office Action cited to Laskowski col. 10, lns. 1-3 as disclosing the afore recited limitation. However, this portion states only that "sensed and stored value sets are generated and correlation values may be tailored to note properties and areas of interest." See Laskowski col. 10, lns. 1-3. Additionally, the Office Action cited to Philipp Figs. 2 and 3 generally s disclosing this limitation. However, neither the cited portions

of Laskowski and Philipp, nor any other portion of the cited prior art discloses the afore recited limitation. Further, the concept of "dark currents" is wholly absent from both cited prior art references. In contrast to the prior art, the current application describes clearly the concept of dark currents. For example, "[t]he dark current measuring values [of the current invention] are determined by intensity measurings carried out with switched-off illumination. These dark currents are deviations from zero in the individual detector elements of the detector system." (Appln. p. 4, lns. 10-12). These concepts are not found in the prior art. For this additional reason claim 5 is allowable.

Claim 6 is allowable because it depends from claims 1, 2, 4, and 5, as discussed above, and for the following additional reasons. Claim 5 recites the limitations of claims 1, 2, 4, and 5, as discussed above, and further includes the limitation of "wherein determining the dark current measuring values (ITD, IRD) intensity measurements is effected with switched-off illumination." The Office Action cited Laskowski at col.7, lns. 6-21 as disclosing the afore recited limitation. However, this portion of Laskowski merely discloses the "marquee" style of activating and deactivating the blue, green, and red emitters of the illumination system. See col.7, lns. 6-21. As was stated with regard to claim 5, the concept of "dark currents" is wholly absent from both cited prior art references. Thus, it follows that a determination of dark current measuring values is also lacking from the cited prior art references. For this additional reason claim 6 is allowable.

Claim 7 is allowable because it depends from claim 1, as discussed above, and for the following additional reasons. Claim 7 recites the limitations of claim 1, as discussed above, and further includes the limitation of "wherein each captured intensity value (IT, IR), is multiplied with a correction factor (a, b) determined for the measuring place (2) of the respective intensity value (IT, IR)." The Office Action cited both Laskowski col. 9, lns. 41-48 and the Philipp col.3

as disclosing the afore recited limitation. However, neither of these portions of the cited art, nor any other portion of the cited art discloses the current limitation. Specifically, the portion of Laskowski cited is directed to the correlation coefficients, which is used to measure the correlation between the sensed value set and the stored value being compared. See col. 9, lns. 18-20; 41-48. In no way does this portion of Laskowski disclose any part of the recited limitation. Additionally, Philipp in no way discloses any type of correction factor, as required by the claim. For these additional reasons claim 7 is allowable.

Claim 14 is allowable because it depends from claim 13, as discussed above, and for the following additional reasons. Claim 14 recites the limitations of claim 13, as discussed above, and further includes the limitation of "wherein the evaluation unit comprises a correction unit for correcting the captured intensity values (I_T, I_R) of the transmitted light and of the reflected light for the measuring places (2) for the purpose of compensating locally differing measuring conditions, as well as an addition unit for adding the corrected intensity values for the measuring places (2)." Because the above recited limitation of claim 14 contains the subject matter discussed above with regard to claim 2, Applicant will not rehash the identical arguments. Rather, Applicant asserts that for all of the reasons discussed above with regard to claim 2, claim 14 is allowable

Claim 15 is allowable because it depends from claims 13 and 14, as discussed above, and for the following additional reasons. Claim 15 recites the limitations of claims 13 and 14, as discussed above, and further includes the limitation of "wherein the correction unit compensates for local intensity fluctuations in the illumination produced by the illumination system (3, 4) during measuring." Because the above recited limitation of claim 15 contains the subject matter discussed above with regard to claim 3, Applicant will not rehash the identical arguments. Rather,

Applicant asserts that for all of the reasons discussed above with regard to claim 3, claim 15 is allowable.

Claim 16 is allowable because it depends from claims 13 and 14, as discussed above, and for the following additional reasons. Claim 16 recites the limitations of claims 13 and 14, as discussed above, and further includes the limitation of "wherein the correction unit compensates for locally differing specifications of the detector system (4, 6)." Because the above recited limitation of claim 16 contains the subject matter discussed above with regard to claim 4, Applicant will not rehash the identical arguments. Rather, Applicant asserts that for all of the reasons discussed above with regard to claim 4, claim 16 is allowable.

Claim 17 is allowable because it depends from claim 13, as discussed above, and for the following additional reasons. Claim 17 recites the limitations of claim 13, as discussed above, and further includes the limitation of "further comprising a storage device with dark current measuring values (ITD, IRD) stored for different measuring places (2), which correspond to transmission or reflection intensity values captured with switched-off illumination, or with correction factors (a, b), stored for different measuring places (2), for the transmission or reflection intensity values determined by a measurement." Because the above recited limitation of claim 17 contains the subject matter discussed above with regard to claims 6 and 7, Applicant will not rehash the identical arguments. Rather, Applicant asserts that for all of the reasons discussed above with regard to claims 6 and 7, claim 17 is allowable.

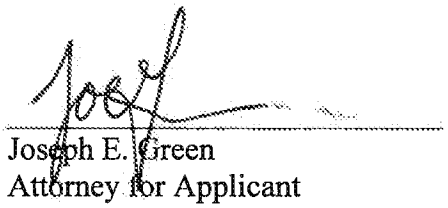
Claim 23 is allowable because it depends from claims 1 and 7, as discussed above, and for the following additional reasons. Claim 23 recites the limitations of claims 1 and 7, as discussed above, and further includes the limitation of "wherein each said captured intensity value is reduced by a dark current measuring value." The Office Action asserts that Laskowski

teaches this limitation because it teaches the switching on of green emitters and the switching off of blue emitters. See Laskowski col. 7, lns. 6-21. This portion of Laskowski fails to disclose the above recited limitation. Additionally, Applicant re-asserts that none of the cited references discloses dark currents in any manner, and thus the references logically fail to disclose the subject matter of the current limitation. For this additional reason claim 23 is allowable.

In view of the foregoing amendments and remarks, Applicant respectfully submits that this application is in condition for allowance and should now be passed to issue. A Notice of Allowance is therefore respectfully solicited. The Examiner is invited to telephone the undersigned if it is deemed to expedite allowance of the application.

Applicant submits that this Amendment is being timely filed. However, the Commissioner is hereby authorized to charge any fees and to credit any overpayments that may be required by this paper under 37 C.F.R. §§ 1.16 and 1.17 to Deposit Account No. 02-2135.

Respectfully submitted,

By 

Joseph E. Green
Attorney for Applicant
Registration No. 60,197
ROTHWELL, FIGG, ERNST & MANBECK
1425 K. Street, Suite 800
Washington, D.C. 20005
Telephone: (202) 783-6040